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"Route Server" Project

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Overview

- Background
- Concepts
- GIX
- Route Server
- Routing Registry
- Implementation Plan

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Background

- IEPG initiative
  - -- Common forum for Internet co-ordination
  - -- November 1991, Santa Fe
    - -- GIX idea evolved
  - -- March 1992, San Diego
    - -- Consensus on ideas and concepts
  - -- June 1992, Tokyo
    - -- Paper

"Proposal for Global Internet Connectivity"

by Almes, Ford and Lothberg

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Background

-- November 1992, Washington D.C.

-- Implementation plan tabled

"Internet Routing in a Multi Provider, Multi Path Open Environment"

by Bates, Karrenberg, Lothberg, Stockman and Terpstra

-- Consensus on plan and pilot.

- RARE Technical Committee/RIPE NCC joint project on the route server aspect of the plan

Concepts

- Three main components for the project
- The physical **“GIX”** itself
- The **“Route Server”**
- The **“Routing Registry”**

GIX

- **Global Internet Exchange** (GIX)
- **Neutral** Interconnect
- Anyone is free to bring there router to the neutral interconnect
- Anyone is free to peer with anyone else.
- The interconnect is most certainly AUP free
- The interconnect media type can be anything that allows each router to talk to any other router directly
- Designed to enhance access and connectivity
- Basis for cost-effective transit
- Problems arise from such an open interconnect point

GIX

- The “N-squared” routing problem
- Possible asymmetric routing.
- Sub-optimal routing
- Even routing loops
- Need Coordinating

Route Server

- Task to produce consistent routing information for various Autonomous Systems (ASes) within its represented region.
- This is done by peering with selected routers at the GIX and filtering in-bound routing announcements then re-distributing these derived routes to other routers at the GIX
- Uses a database to interact with when building configuration files
- Does not take part in any packet forwarding itself
    - Make use of third-party BGP routes (i.e. NEXT_HOP)
- Cuts down much of the administration for the various providers at the GIX

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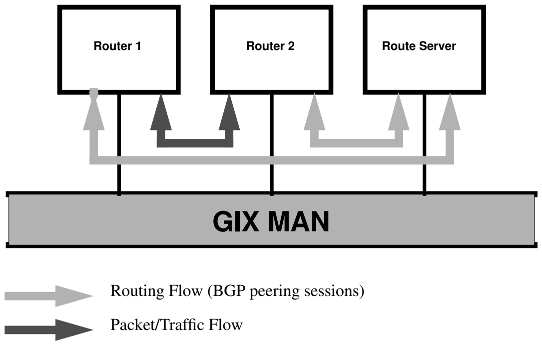
Route Server



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Routing Registry

- Neutral run registry
- Would manage routes for a region or domain (model used -- Geographic)
- Registration of routing policy information
- Network owners register the routes rather than service providers
- Some guidelines will be needed when there is possible conflict
- For Europe, the current RIPE document may need to be reviewed
- Database and objects must be easily derived for use by the route server

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Implementation Plan

WEEK 5

-- Produce final concept paper and distribute

-- Develop a procedure paper for service providers

-- Start to populate RIPE database with needed info

WEEK 8

-- Pilot an operational European Route Server at **"Mae-East"** in Washington D.C.

-- Develop tools needed for Route Server / Routing Registry interaction.

-- Establish peer sessions

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Implementation Plan

WEEK 9

-- Start work on any needed enhancements

-- Start work on multiple route server interaction

WEEK 11

-- Present results of pilot route server at the Columbus IETF

-- Continue to work on enhancements and extensions to the route server

WEEK 26

-- Present final project report at Amsterdam IETF

-- Summarise and plan at any future work needed